Connecticut Route 82/85/11 Corridor
Detailed Comments on Section 404 Permit Application Public Notice (PN 199702529)
and Draft Environmental Impact Statement and Section 4(f) Evaluation
(FHWA-CT-EIS-98-01-D)

The preceding cover letter summarizes the primary conclusions from EPA's review of the Draft Environmental Impact Statement (DEIS) and the Clean Water Act section 404 permit application for the Route 82/85/11 Corridor. This attachment provides the basis for those conclusions and raises additional concerns.

I. Introduction

Both the federal Clean Water Act and the National Environmental Policy Act direct federal agencies to evaluate fully the range of impacts of the various alternatives to address the traffic and safety issues, and to disclose those impacts to the public. In evaluating CTDOT's application for a federal permit under section 404 of the Clean Water Act, and advising the Corps of Engineers as to whether a permit can issue, EPA focuses primarily on the rivers and streams, lakes, ponds, and wetlands -- the entire aquatic environment -- that would be affected by the proposed project alternatives. The Corps and EPA have a legal obligation to ensure that only the least environmentally damaging practicable alternative be permitted, and that no project be permitted that would result in significant adverse impacts to the aquatic environment.

EPA's § 404(b)(1) guidelines (40 CFR 230) set forth the environmental standards which must be satisfied in order for a § 404 permit to issue. Two key provisions of the guidelines are critical when considering the alternatives proposed for the Route 82/85/11 corridor. First, the guidelines generally prohibit the discharge of dredged or fill material if there exists a practicable alternative which causes less harm to the aquatic ecosystem. Where, as here, the project is not water dependent and involves fill in wetlands and other special aquatic sites, practicable, less environmentally damaging alternatives are presumed to exist unless clearly demonstrated otherwise. Second, the guidelines prohibit issuance of a permit if the discharge would cause or contribute to significant degradation of waters of the United States.

As discussed below, the DEIS fails to: 1) clearly document the need for this project; 2) consider a complete range of alternatives; and 3) fully analyze the expected environmental impacts of the alternatives on new location. Based on the information presented in the DEIS and section 404 permit application, it is EPA's conclusion that the Corps should not issue a § 404 permit for any of the expressway alternatives identified in the DEIS because none of them qualifies as the least environmentally damaging practicable alternative. In addition, all of the expressway alternatives would cause or contribute to significant degradation of the aquatic environment, which is a further basis for denying a permit.

II. Project Background

According to the DEIS, Routes 82 and 85 are "substandard two-lane arterials" between Colchester

(at Route 2) and Waterford (at I-95/I-395) that experience heavy traffic and congestion during commuter and recreational traffic periods. The DEIS states that existing levels of congestion on those roadways, along with projected increasing congestion and associated safety problems, rekindled interest in the completion of Route 11 between Salem (at Route 82) and the Interstate 95/395 area in Waterford. As a result, this DEIS was prepared for the Route 82/85/11 corridor. The DEIS includes information generated since the 1970's associated with attempts to complete Route 11 as well as new information and alternatives developed through the MIS/EIS process and interagency coordination. Sections 1 and 3 of the DEIS contain a detailed discussion of the project history and background.

III. Alternatives

The § 404(b)(1) guidelines prohibit the discharge of dredged or fill material if there "is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem so long as the alternative does not have other significant adverse environmental consequences." [40 CFR 230.10(a)]. This fundamental requirement of the § 404 program is often expressed as the regulatory standard that a permit may only be issued for the "least environmentally damaging practicable alternative" or LEDPA. "Practicable" is defined as "available and capable of being done after taking into consideration cost, existing technology and logistics in light of overall [or, basic] project purposes." [40 CFR 230.3(q)]. For "non-water dependent" activities located in wetlands or other special aquatic sites, such as the Route 82/85/11 project, the guidelines presume that practicable alternatives exist and that such alternatives would be less damaging to the aquatic environment. The burden to demonstrate compliance with the alternatives test and rebut the presumptions rests with the applicant.

In order to be practicable, an alternative must be capable of satisfying the basic project purpose. The Corps has determined, as stated in its February 10, 1999 letter to CTDOT, that the basic project purpose in this case is “to address the existing and future year (2020) safety and capacity deficiencies in the existing Route 82 and 85 corridors within the study area defined by the Route82/85/11 study.” EPA agrees that the Corps has properly identified the purpose of the transportation improvement project for which a permit is being sought.

The DEIS and the § 404 permit application present a broad range of possible alternatives to address the transportation deficiencies in the corridor. None of the alternatives is identified as the preferred alternative. The alternatives consist of nine expressway alternatives on new location, four alternatives based on widening of or implementation of TSM measures on existing roads (hereinafter referred to as “upgrade” alternatives), TDM/transit initiatives, and a “no build” alternative. The various alternatives are discussed in detail in Section 3 of the DEIS. Briefly, the various build alternatives are summarized below.

Upgrade Alternatives:

*Alternative $W_{(4)}$: Widening of Routes 82 and 85 with a full four-lane cross section.
*Alternative $W_{(4)}$m: Widening of Routes 82 and 85 with a modified four-lane cross section to avoid impacts.
*Alternative $W_{(2)}$: Two-lane cross-section for Routes 82 and 85 with widening to upgrade to current highway design standards.
*Transportation Systems Management (TSM) Alternative: Operational improvements, such as intersection upgrades, turning lanes, and signal modifications.

Expressway Alternatives:

*92PD Alternative: Full build expressway on new location (C/D alternative introduced in prior studies refined during a preliminary design (PD) process undertaken in 1992).
*Alternative $E_{(4)}$: Modification of the 92PD alternative to avoid new residential subdivisions.
*Alternative $E_{(2)}$: Modification of alternative $E_{(4)}$, utilizing only the two southbound lanes.
*Alternative $F_{(4)}$: Full build, four-lane expressway on new location; approximately 900 m. (3000 ft.) west of 92PD.
*Alternative $F_{(2)}$: Two-lane variation of $F_{(4)}$ utilizing only the northbound lanes.
*Alternative $G_{(4)}$: Full build, four-lane expressway on new location; approximately 900 m. (3000 ft.) west of 92PD; a variation of $F_{(4)}$.
*Alternative $G_{(2)}$: A two-lane variation of $G_{(4)}$ utilizing only the northbound lanes.
*Alternative $H_{(4)}$: New location-partial build expressway with four-lanes and a mid-corridor touchdown point on Route 85, south of Route 161, where widening option $W_{(4)}$ would continue to I-395.
*Alternative $H_{(2)}$: New location-partial build expressway with two-lanes and a mid-corridor touchdown point on Route 85, south of Route 161, where widening option $W_{(2)}$ would continue to I-395.

Of the various alternatives presented in the DEIS, EPA believes that one or more of the upgrade alternatives appear to be practicable, and all of them would cause less environmental damage than the expressway alternatives.

A. Practicability

As discussed above, under the § 404(b)(1) guidelines, a "practicable" alternative is one which meets the basic project purpose, is available, and is capable of being done taking into account logistics, cost, and existing technology. The upgrade alternatives discussed in the DEIS are available and capable of being done. Road widening and improvement projects are commonly designed and constructed by CTDOT. The costs for the upgrade alternatives are much lower than the costs of the new expressway alternatives, and are well within the range of transportation projects commonly funded by CTDOT and FHWA. The DEIS indicates that the costs for the

widening alternatives range from $31 million to $41 million, and the TSM measures are estimated to cost significantly less. In contrast, the full build expressway alternatives range in cost from $255 million to $345 million for the four lane versions and from $155 million to $225 million for the two lane versions. Partial build expressway alternatives range in cost from $82 million for the two lane version to $114 million for the four lane version. Clearly, costs are not a factor that affects the practicability of the upgrade alternatives in this case.

It is not clear from the DEIS analysis that the current and anticipated transportation deficiencies are of the magnitude that warrants many of the alternatives under consideration. We believe that many of the alternatives under consideration do not reflect the more modest nature of the transportation deficiencies. Additional information (identified below and in the cover letter to this attachment) is needed to fully evaluate capacity and safety issues in the corridor.[1] Nevertheless, based on the information provided in the DEIS, EPA believes that existing and future safety and capacity deficiencies could be addressed satisfactorily by the upgrade alternatives. Specifically, the DEIS reveals that a four lane widening of Routes 82 and 85 in conjunction with TSM measures appears to result in a safe road capable of handling existing and projected traffic at an acceptable level of service. At a minimum, the DEIS does not provide a basis to rebut the presumption that this and other less damaging upgrade alternatives, such as two lane widening coupled with substantial TSM, or extensive TSM measures alone, are practicable.

1. Safety

The DEIS cites deficiencies in roadway alignment, numerous curb cuts, excess speeds, and congested conditions as factors leading to accidents on Routes 82 and 85. Yet the DEIS provides very little specific information about the nature and extent of existing and future safety problems in the corridor. Data on numbers of accidents for the past three years are provided, but they are not placed in any broader context. It is impossible from the information contained in the DEIS to estimate and compare the accident rate and severity to the statewide averages for similar roads. Nor do the SLOSSS critical rate data shed light on the relative frequency and severity of accidents in the corridor. Thus the DEIS is deficient in documenting the current and future safety needs and consequently is deficient in identifying alternatives specifically designed to address such needs. In addition, the DEIS fails to make specific projections about the potential safety benefits of the various alternatives so that they can be fairly evaluated and compared. The final EIS must address these deficiencies. Based on the information contained in the DEIS, it appears that one or more of the upgrade alternatives would result in sufficient safety improvements to meet the basic project purpose.

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[1] As part of the analysis, the DEIS should describe other CTDOT projects which are analogous from a safety, capacity, and traffic volume standpoint and the measures (including TSM) which are planned or have been successfully implemented to resolve such problems. For example, capacity and safety problems on Route 6 in the Brooklyn section are reportedly being addressed with community sensitive road improvements.

Both the four lane and the two lane widening alternatives are designed to improve the existing roadway to conform to AASHTO standards, including wider lanes and shoulders, improved stopping and site distances, and improved vertical and horizontal alignments. These standards are normally considered safe, and are used in the design and construction of roads throughout Connecticut and nationwide. The DEIS confirms (section 5, page 9) that safety would increase substantially following the four-lane widening of Route 85 from the Route 82 intersection to just north of the I-395 intersection. While the DEIS notes (section 3, page 48) that there may be an increase in accident rates due to increased volume on a widened roadway, it also states that the improved physical layout would substantively reduce hazards along the roadway. The DEIS does not make a convincing case that a higher projected volume will lead to an increased accident rate (it merely makes the assertion). The analysis does not seem to take into account the likely reduction in accidents that would result from improved capacity conditions (e.g., fewer turning and rear end type collisions with adequate shoulders and improved site and stopping distances) on the widened and upgraded Route 82 and 85 roadways. Even if the accident rate were to increase due to widening, the severity of accidents would likely decrease due to the upgrade to AASHTO standards and the reduction in roadway hazards, and particularly if the widening were accompanied by TSM measures designed to improve safety further. Thus, at a minimum, it appears that a four lane widening (the DEIS does not distinguish safety results between the $W_{(4)}$ and the $W_{(4)}$m alternatives), without TSM, and even more so with TSM, would satisfy the safety component of the basic project purpose. It is also likely that a two lane widening to AASHTO standards coupled with TSM measures would improve safety over the no build scenario and result in a safe roadway. The DEIS mentions that TSM "may" be used in conjunction with the various upgrade alternatives, but no complete analysis is given indicating the resultant improvements in safety and level of service. The final EIS must provide a detailed analysis of the use of TSM improvements in combination with the various widening alternatives.

In addition, the TSM measures alone appear likely to improve safety compared to the no build scenario. The TSM alternatives would provide for an increased level of safety through operational improvements such as intersection upgrades and signal modifications, specifically directed toward improving safety and easing traffic flow within the 82/85/11 corridor. Examples of intersection upgrades include the addition of left turn lanes and the increase of storage bay length. Signalization improvements consist of additional traffic signals, coordinated signalization, and changes in signal timing, phasing and actuation. Turning lane and signalization improvements would result in fewer traffic queues at intersections due to left turning vehicles. This would contribute to a lowering of the frequency of rear-end and turning collisions, the most common type of collisions in this roadway system. The addition of turning lanes at key intersections, combined with phasing signals to allow several non-conflicting movements to occur within a cycle, and coordinating signals to optimize traffic flow along the main arterial, would reduce accident rates and traffic delays. The EIS should more fully evaluate the potential for these and other creative TSM measures to remedy safety deficiencies.

Lastly, the DEIS states that accident rates would be more likely to decrease on Routes 82 and 85 due to reductions in traffic volumes if an expressway alternative were constructed on new location.

However, there is no specific evaluation of potential accident rates and severity that would result on the new location expressways themselves. Consequently, we are unable to evaluate how much these potential accident rates would affect overall safety throughout the corridor. For example, it is unclear whether and to what extent the overall increase in safety along Routes 82 and 85 would be offset by the expected accident rates on the new expressway. Also, the DEIS points out that the construction of the expressway alternative will do nothing to remove roadside hazards currently existing along Routes 82 and 85. It is unclear how the accident rates and severity on the new expressway, combined with the accident rates and severity on the unimproved existing roads, would compare to the accident rates and severity of an upgraded Route 82 and 85. The DEIS should provide the information necessary to make these determinations.

2. Capacity

The DEIS states that existing Routes 82 and 85 are substandard based on current highway design standards, and that during certain peak periods, traffic in the corridor is heavy and predicted to increase yearly. Hence, the other component of the basic project purpose is to address existing and future capacity deficiencies. Unfortunately, the discussion of capacity in the DEIS suffers from flaws similar to those discussed above regarding safety. The DEIS fails to present sufficient data about the existing and projected capacity deficiencies to allow a thorough evaluation of capacity needs and potential solutions.[2] For example, the data are not sufficient to distinguish between peak summer weekend traffic problems and non-recreational traffic problems. The DEIS acknowledges (section 4, page 10) that the summer traffic volumes are markedly higher than winter conditions, that the July 4th weekend volumes likely represent the peak volume condition for the entire year and are likely higher than the 30th highest hour volume condition, and that they would not be suitable for design or analysis purposes. Nevertheless, the DEIS states that the LOS analyses are based on summer Friday peak hour conditions (see section 4, page 5). It is unclear whether these summer Friday peak hour conditions are the very conditions which the DEIS states would not be suitable for design or analysis purposes. But in any case, the existing and projected LOS during non-peak recreational times of the year are not presented. While it may well be necessary to take steps to address traffic conditions that occur on occasional days in the summertime, we are not persuaded that such peak hour projections should be the primary basis for characterizing traffic problems or evaluating the ability of various alternatives to improve capacity. The data also do not allow for a clear understanding of the effects of local vs. through traffic on the capacity problems (although the DEIS asserts the existence of local vs. through traffic conflicts) or the effects of commuter vs. noncommuter traffic. As a result, the DEIS does not present in sufficient detail the

[2]In some cases the data seem to be in conflict. For example, Figure 4-13 depicts the current condition of the entire length of Route 85 from Route 82 to the Cross Road Extension to be LOS E, and the remainder of the road to I-95 to be LOS F. This characterization seems inconsistent with the information provided in Tables 4-11 and 4-12, and Figures 4-11 and 4-12. It also seems inconsistent with the speed study data, which suggest that traffic is flowing through the entire corridor efficiently (see Table 4-5).

causes of and potential solutions to existing and projected capacity deficiencies. In addition, as discussed further below, the DEIS fails to analyze fully the capacity improvements that would result from combinations of upgrade alternatives (e.g., widening plus substantial TSM) or from the combination of upgrades and TDM initiatives. The final EIS should address all of these deficiencies, as well as those noted in the cover letter.

According to CTDOT's traffic projections, the four lane widening alternative would achieve improvements similar to the full build alternatives (compare, e.g., Figures 5-4 and 5-8): it would result in an acceptable LOS on road segments throughout the corridor, with the exception of the Route 85 segment south of I-395 (LOS F) and Route 161 south of Walnut Hill Road (LOS E). The four lane widening would also be substantially better than the no build condition.[3]

In addition to the LOS information for roadway segments, the DEIS presents volume and capacity analysis results for signalized and unsignalized intersections throughout the study corridor. Again, the widening would result in a substantial improvement over the no build condition. For both the four lane widening and expressway alternatives, the LOS at signalized intersections would be generally acceptable, with a few exceptions for future peak hour volumes (assuming the worst case analysis is appropriate). In addition, several unsignalized intersections are projected to operate at unacceptable LOS under peak hour conditions. However, the DEIS indicates (section 5, page 9) that for all the intersections for which TSM improvements were considered, acceptable levels of service are expected.[4] The DEIS does not evaluate TSM opportunities for every intersection for which poor conditions are expected to remain after widening or expressway construction. It is reasonable to assume that the intersections which have been specifically targeted for TSM measures are not the only instances in the project area where TSM measures would help address roadway deficiencies under existing conditions and the various widening scenarios.

EPA believes that the effect of TSM measures on roadway safety and capacity is an important part of the analysis of the various widening alternatives. Consequently, we strongly encourage CTDOT to explain in narrative fashion, and through appropriate graphs and charts, how the LOS would be affected in each of the problem areas if TSM measures were implemented alone or in combination

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[3]The DEIS equates capacity improvements from a two lane widening to those of the TSM measures (although no supporting information is provided to justify this equation). EPA believes a two lane widening combined with TSM measures would likely result in a more efficient roadway than either of those alternatives considered separately. But because no data are provided for either the TSM or two lane widening scenarios (or a combination of the two) we cannot determine how effective these options would be in improving capacity. Without such information it is difficult to fully compare and evaluate the alternatives under consideration.

[4]Unfortunately, Figures 5-2 and 5-3 and Tables 5-2 and 5-3 related to the widening alternative do not show the effect of the TSM measures at key intersections and hence provide an overly negative projection of traffic conditions.

with widening alternatives[5]. The implementation of TDM measures, such as the increased bus service for commuters to Hartford and New London, should also be analyzed more fully in conjunction with the upgrade alternatives.

In summary, based on the information available in the DEIS, it appears that at least one upgrade alternative -- the four lane widening alternative, combined with TSM improvements -- would satisfy the basic project purpose. It is unclear whether this alternative would perform as well as the expressway alternatives, but the test under the guidelines is whether the upgrade could meet the project purpose, not whether it would be the best alternative from the transportation standpoint. The information in the DEIS does not provide a basis to rebut the presumption that this alternative, and other upgrade alternatives, would be practicable.

In addition to safety and capacity issues, we recognize the importance of minimizing the impacts of any alternative on people's homes and businesses. Although the upgrade alternatives would affect a greater number of properties than the expressway alternatives, the actual acreage affected is quite small, totaling about 50 acres at a maximum. In contrast, although the new location expressway alternatives would affect fewer properties, the acreage affected is large, totaling about 223 acres at a minimum, and as much as 678 at a maximum. Looking at the number of structures potentially affected, the widening alternatives are roughly equal to the new location alignments, and are within the range typically encountered in highway projects. Therefore, we do not believe that the potential socioeconomic impacts from the upgrade alternatives would render them impracticable. Nevertheless, we appreciate community concerns about the loss of land, structures and changes to the landscape associated with roadway improvements. As discussed in the cover letter to this attachment, we support and encourage efforts by the CTDOT to work with the affected communities toward the development of community sensitive upgrade options.

B. Least Environmentally Damaging

A § 404 permit may be issued only for the least environmentally damaging practicable alternative. As discussed above, one or more of the upgrade alternatives appear to be practicable. In addition, any upgrade would be far less environmentally damaging to the aquatic environment than any of the expressway alternatives depicted in the DEIS, and they would not cause other significant environmental impacts. Section V of this attachment describes EPA's view of the relative impacts in more detail.

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[5] Examples of the areas which should be analyzed with the addition of TSM measures include the Route 161/Route 1 intersection under the 2020 expressway alternatives; the Cross Road/Parkway North and South interchanges along I-95 under the 2020 PM peak conditions for all alternatives; and several unsignalized intersections in the corridor that are expected to operate at unacceptable LOS in 2020 peak hour conditions for both widening and new location expressway alternatives.

Of the full build expressway alternatives, the four lane designs would result in the direct destruction of approximately 29 to 35 acres of wetlands. Two lane full expressway options would destroy from approximately 15 to 20 acres of wetlands. The partial build alignments would destroy from approximately 7 acres of wetlands for the two lane designs to 11 acres for the four lane designs. Many hundreds of feet of Class A streams would be culverted. Indirect impacts, mostly in the form of habitat fragmentation, would increase the extent of adverse impacts to several hundred, and possibly more than a thousand, acres of wetlands and upland forest. In contrast, the widening footprints would fill between approximately 3 and 5 acres of wetlands, all as sliver takes along the length of Routes 82 and 85, and pose little risk of indirect impacts; and the TSM measures would have negligible direct and indirect effects.

The new location corridor is a nearly continuous complex of upland ridges separated by stream and wetland ravines and valleys, with some broader wetland systems in a few locations. The expressway alternatives depicted in the DEIS would cause severe adverse impacts to these stream and wetlands systems. The wetland filling would encompass extensive, key areas of the three major wetland complexes described in Section IV of this Attachment. This filling would occur in numerous places across the new location corridor, spreading the harm throughout this mostly undisturbed landscape. Under any of the expressway alignments, three out of the six forest habitat blocks would suffer critical acreage losses and a fourth would lose important acreage. Using culverts and limited bridging, between 9 and 13 new stream crossings would occur on the three major, Class A-designated brooks where few disruptions currently exist.

As the DEIS acknowledges, (section 5, pages 53 and 54), the majority impacts associated with the upgrade alternatives would occur in areas that were previously affected by the construction of the existing roads and subsequent development. The wetland areas and streams to be affected by the upgrades have been degraded by these prior disturbances. Far less impact is expected to result from the introduction of non-native species or increased sediment loading associated with the upgrades, as compared to the impacts that would result from any of the new location alternatives. EPA believes that the construction activities associated with the upgrade alternatives would cause little additional damage to the narrow wetland areas that would be affected, and common best management practices (e.g., erosion control measures), implemented effectively, could further reduce the risk of harm.

In terms of wildlife habitat, the DEIS recognizes the widening alternatives would be “likely (to) have the least impact to wildlife populations since the majority of impact area will occur along the existing roadway which includes developed areas and areas of low wildlife value....” (Section 5, page 68). According to the DEIS, expressway alternatives on new location would have much greater adverse impacts to wildlife populations, forming new barriers to smaller mammals and herpetofauna, as well as fragmenting forest blocks. All of the new location alternatives would cut through key portions of three to six forest habitat blocks, while the widening alternatives would only graze the edges of two blocks.

Section 5.4.6.2 (page 61) of the DEIS notes that the widening alternatives could result in increased

stormwater runoff to Lake Konomoc, a drinking water reservoir. We do not believe that this potential impact would render the upgrade alternatives to be more damaging to the aquatic environment than the expressway alternatives. Under current conditions, there is already a potential risk to the reservoir from contaminated stormwater runoff. According to local officials and CTDOT, there is no existing roadway drainage system to protect the quality of runoff to the reservoir. Based on a preliminary evaluation, the DEIS identifies (section 5.4.6.2, page 61) two possible stormwater drainage and collection systems that could minimize or eliminate the risk of degrading the lake's water quality. Thus, it appears that measures could be implemented that would avoid or greatly reduce the risk of adverse indirect effects to the lake due to an upgrade, and would improve the current situation considerably. If the expressway alternatives were built, the current risk of contamination of the reservoir by runoff from the existing Route 85 would likely continue.

Clearly, the upgrade alternatives would be less damaging to the aquatic ecosystem than the expressway alternatives. CTDOT has not offered any information to show that the upgrade alternatives would have greater adverse impacts to the aquatic ecosystem. Therefore, based on current information, an upgrade would be the least environmentally damaging practicable alternative. Further detailed analysis of the different upgrade options would be necessary before we could conclude precisely which of the upgrades would be the LEDPA.

IV. Environmental Setting

A. Aquatic Resources

1. Landscape Setting

The project study area extends from Route 82 in the north to I-95 in the south, and from Route 85 in the east to the Nehantic State Forest and Route 161 in the west. The area is characterized by low rolling hills, moderately broad and level upland and valley bottoms, interspersed with steep hills and rugged terrain. The area is mostly undeveloped, with large expanses of forested upland and wetland, which provide excellent wildlife habitat. The project study area is part of a larger forested upland and wetland ecosystem that is connected via landscape corridors to adjacent extensive undeveloped forest habitat, for example, the Nehantic State Forest. Highly valuable aquatic resources are found throughout the area, including a wide variety of wetlands and streams, including forested, scrub-shrub and emergent wetlands, vernal pools, and watercourses which range from large riverine complexes and perennial streams to intermittent streams, lakes, ponds, and impoundments. Many of these streams are associated with forested wetland systems, further enhancing the wildlife value of these important habitats. Sections 4.4 - 4.7 of the DEIS provide a thorough description of the ecological setting of the study area.

2. Wetlands and Other Waters

Most of the wetlands that occur within the project study area are located in three main complexes:

from north to south, Harris Brook, Latimer Brook, and Oil Mill Brook. These three brooks are the primary watercourses within the corridor. Harris Brook, and the upper and middle reaches of both Latimer and Oil Mill Brooks, are narrow and winding with densely vegetated riparian corridors, and generally have cold water temperatures. In their lower reaches, Latimer and Oil Mill Brooks widen somewhat and become more typical warm water streams. Harris Brook flows west to the East Branch of the Eight Mile River; both Latimer and Oil Mill Brooks flow south to the Niantic River. Lake Konomoc, the largest water body in the area and a drinking water reservoir, is part of the upper Oil Mill Brook watershed. All three brooks are designated Class A streams according to state water quality standards classification.

All three complexes are comprised of a variety of wetland types, including forested and scrub-shrub swamps, emergent marshes, open water, and combinations of all of these types. These wetland complexes range from hillside seepage swamps to bottomland shrub swamps along brooks, and emergent marshes and open water within impounded beaver flowages. In addition, vernal and other temporary pools dot this landscape as isolated depressions or in association with the forested and shrub swamps. Throughout these wetland complexes, topographic and vegetative diversity are uniformly high. These complexes show few signs of human disturbance, e.g., exotic/invasive plant species, forest cutting, paved roads, etc.

The most abundant type of forested wetland in the project study area is red maple swamp, dominated by a mixture of red maple (*Acer rubrum*), yellow birch (*Betula alleghaniensis*), black gum (*Nyssa sylvatica*), and American elm (*Ulmus americana*). Shrub swamps are dominated by highbush blueberry (*Vaccinium corymbosum*), mountain laurel (*Kalmia latifolia*), winterberry (*Ilex verticillata*), speckled (*Alnus incana*) and smooth alder (*A. serrulata*), meadow sweet (*Spiraea latifolia*), steeple bush (*S. tomentosa)*, northern arrowwood (*Viburnum dentatum*), and buttonbush (*Cephelanthus occidentalis*). There are lesser amounts of emergent marshes dominated by cattail (*Typha latifolia*) and a variety of aquatic plants, and a few areas of wet meadow, mostly in the form of active or abandoned hay fields or pasture, dominated by wetland grasses (Poaceae), sedges (*Carex* spp.), rushes (*Juncus* spp., *Scirpus* spp.), and some shrubs. Sections 4.4 and 4.6 of the DEIS provide a more detailed description of the wetlands and water resources in the study area.

3. Ecological Functions

The stream and wetland systems listed above, particularly those that exist within the new location corridor, are outstanding for their ecological integrity and broad range of functions. These functions stem from the mosaic of relatively undisturbed stream, wetland, and upland complexes in and adjacent to the project study area. Field work by CTDOT's consultant documented that the Harris Brook and Oil Mill Brook wetland complexes provide 12 of the 13 functions and values listed in the Corps Highway Methodology-Descriptive Approach. They documented all 13 for the Latimer Brook complex. Principal functions and values exhibited by these wetland systems include wildlife habitat; groundwater recharge/discharge; sediment/toxicant detention; production export; and fish and shellfish habitat. Sections 4.4 and 4.6 of the DEIS provide a more thorough

discussion of the ecological functions provided by the wetland resources in the project study area; a review of Appendix B to the section 404 permit application, which contains the functional assessment field forms completed by CTDOT's consultant, provides the underlying functional evaluation for numerous wetlands throughout the project study area.

Generally, EPA agrees with the description of aquatic resources and the landscape setting contained in the DEIS. We note two important exceptions, however, with respect to vernal pools/amphibian resources and wildlife habitat blocks. Our field visits to the project study area revealed what appears to be an abundance of vernal and other temporary pools that likely serve as key habitat for a variety of amphibian and reptilian species. During their relatively short time in the field, EPA staff noted several species of salamanders throughout the new location corridor. To more thoroughly and accurately describe the types and extent of wildlife resources present in the project study area, we strongly believe that the new location corridor requires an in-depth field survey to identify vernal and other temporary pools, and to carefully explore this area for rare amphibian and reptilian species. Due to the undisturbed nature of the new location corridor, and the mosaic and complexity of aquatic and terrestrial systems, there is a good chance that rare or uncommon amphibian and reptilian species could be found.

Based upon our review of the DEIS and other supporting information, e.g., land use zoning and property maps, we believe that several of the wildlife habitat blocks shown in Figure 4-17 are larger (some substantially) than depicted, and that a few key connecting corridors are missing from this figure. For the final EIS, we recommend re-analyzing the methods used for delimiting the boundaries of habitat blocks and identifying habitat corridors, and revising the extent of these blocks and the number and location of corridors.

V. Significance of Impacts

A. Description of the Alternatives

Section 3.3 of the DEIS describes the typical dimensions for the build alternatives. They are summarized briefly below.

Upgrade alternatives:

4-lane: variable r-o-w width (maximum 150 feet in some areas), 64 feet pavement width
4-lane (m): variable r-o-w width (maximum 150 feet in some areas), 48 feet pavement width
2-lane: variable r-o-w width (maximum 100 feet in some areas), 44 feet pavement width.
TSM: limited widening for turning lanes at particular intersections; widths unspecified.

Expressway alternatives:

4-lane: 300 feet right-of-way width, 142 feet pavement width
2-lane: 150 feet r-o-w width, 55 feet pavement width

The widening alternatives would fill between 3.4 and 5.1 acres of wetlands, including small areas along the edges of 2 ponds, and require extending existing culverts at 13 perennial and intermittent streams. The TSM alternative would fill 0.7 acres of wetlands and require culvert extensions at 4 perennial and intermittent streams. Loss to forest habitat blocks would range from 3 acres for the two-lane widening design to 4.5 acres for the four-lane design. TSM improvements would have negligible effects upon forest habitat blocks. (As noted above under the section on Alternatives, use of the term "upgrades" includes a combination of the widening alternatives with TSM measures.)

In contrast, construction of the expressway alternatives on new location would result in the direct destruction of between 7.5 and 35 acres of high quality wetlands. Of the full build expressway alternatives, the four lane designs result in the direct destruction of 28.7 to 35.3 acres of wetlands. Two lane full expressway designs would fill 15.4 to 19.6 acres of wetlands. The partial build expressway alignments require the direct filling of 7.4 acres of wetlands for the two lane design and 10.9 acres for the four lane design. In addition, the expressway alternatives on new location would require the crossing and culverting or bridging of between 8 and 13 perennial and intermittent streams and 1 pond. These crossings all would be new. Also, the loss to forest habitat blocks would range from 71 acres for the two-lane partial build design to 94 acres for the four-lane design. For the full build alignments, the loss to forest habitat blocks would range from 117 acres for the two-lane designs to 169 acres for the four-lane designs.

B. Adverse Environmental Impacts

Section 5.4 of the DEIS contains a description of the general types of direct and indirect adverse environmental impacts caused by constructing new highways and, to a much lesser degree, by widening existing roadways. These impacts are summarized below.

• Land clearing, roadway cuts, and road base fill, removing all vegetation within the right-of-way and dramatically altering the topography and surface hydrology of the land.

• Stream and river culverting at crossings and vegetation clearing around crossings, causing loss of stream-side and -bottom habitat, sedimentation of waterways, increased water temperatures, and lowering of water quality.

• Erosion of cut slopes and unstabilized fill, causing sedimentation of adjacent water bodies and wetlands that smothers plants and sedentary animal species, degrades water quality, and renders habitat less suitable for fish and wildlife.

• Placement of long, wide permanent features through an undisturbed landscape, separating forest blocks and fragmenting wildlife habitat, degrading adjacent areas and rendering remaining habitat less valuable.

1. Upgrade Alternatives

These alternatives would cause minor to perhaps moderate adverse impacts. The wetland filling associated with the widening and TSM alternatives would involve slices or sliver-takes along the edges of several wetlands that abut existing Routes 82 and 85. Culverts at existing stream crossings would have to be extended several feet on each side, and some fill in wetlands might be necessary at these crossings to achieve proper slopes. Nearly all of the wetlands that would be directly affected are forested and scrub-shrub. In addition, for the widening alternatives, forest habitat blocks 1 and 2 would each lose about 2.2 acres along their eastern edges.

In section 5.4.2.2 (pages 53 and 54), the DEIS states that the majority of anticipated impact areas associated with the upgrade alternatives would overlap areas that were previously affected by the construction of the existing roads and subsequent development. According to the DEIS, the wetland areas and streams to be affected by the upgrades have been degraded by these prior disturbances -- plant communities with an abundance of exotic or invasive species; stream channels containing runoff sediment and other debris; and adjacent upland habitat that has been cleared, excavated, planted with exotic plant species, and developed. The DEIS mentions that "little impact resulting from introduction of non-native species is anticipated as many of those species already exist there today. Sediment/toxicant loading into wetland areas would also be . . . much less than any of the new location alternatives." EPA agrees with this assessment. The construction activities associated with the upgrade alternatives would cause little additional damage to the narrow wetland areas that would be affected, and common best management practices (e.g., erosion control measures), implemented effectively, could further reduce the risk of harm.

In terms of wildlife habitat, Section 5.4.10.2 (page 68) of the DEIS singles out the widening alternatives as "likely [to] have the least impact [compared to expressway alternatives] to wildlife populations since the majority of impact area will occur along the existing roadway which includes developed areas and areas of low wildlife value characterized by noise and other man-made sources of impact." Again, EPA agrees with this conclusion. Upgrade construction activities would be mostly limited to narrow portions of adjoining wetland areas already disturbed by the road itself and a variety of human activities, as described above. Along the narrowest lengths of Route 85 where widening would extend into uncleared areas, these activities would primarily involve cutting into bedrock outcrops and steeply sloped uplands, not wetlands.

With regard to stream crossings and culvert extensions, Section 5.4.6.2 (pages 59 to 61) of the DEIS notes that there would be some vegetation loss and alteration of the stream bed and banks which could result in sedimentation impacts, but that "sedimentation impacts would be much greater with the alternatives on new location as the area of exposed soils would be much larger." EPA agrees. The DEIS continues, stating that widening "construction would be largely confined to work near the existing roadways, [so] little stream-side vegetation would be lost, therefore, stream temperatures would remain virtually unchanged." In contrast, in Sections 5.4.6.5 and 5.4.6.6, the DEIS describes the stream impacts for the expressway alternatives as including "streamside vegetation clearing and increased sediment loading . . . [with] longer-term water quality impacts"

likely to occur from road runoff, and fisheries impacts that "include elevated water temperatures near cleared areas, and stormwater pollutant inputs." EPA agrees with these conclusions too.

In the southern portion of Route 85, within the contributing watershed of Lake Konomoc, there is a potential for indirect adverse effects to this drinking water reservoir from increased stormwater runoff associated with roadway upgrading and operation. According to local officials and CTDOT, there is no existing roadway drainage system to protect the quality of runoff to the reservoir. Section 5.4.6.2 (page 61) of the DEIS suggests two possible stormwater drainage and collection systems that could minimize or eliminate the risk of degrading the lake's water quality. We believe that, upon additional examination and design, at least one of the two would prove feasible, greatly diminishing the risk of adverse indirect effects to the lake, and improving the current situation considerably.

Beyond the potential risk to Lake Konomoc, we see little potential for any more than minor indirect adverse effects to the aquatic ecosystem occurring from construction or operation of the upgrade alternatives because the direct adverse impacts to wetlands and other waters are individually small, few in number and total extent, and occur in an already degraded landscape. Moreover, section 5.4 of the DEIS suggests a number of effective minimization and mitigation measures that could further reduce any potential adverse indirect effects that might occur.

In summary, we anticipate no significant adverse impacts to the aquatic ecosystem from the upgrade alternatives.

2. Expressway Alternatives

The expressway alternatives depicted in the DEIS would cause severe adverse impacts to the aquatic ecosystem. The wetland filling would encompass extensive, key areas of the three major wetland complexes described above. This filling would occur in numerous places across the new location corridor, spreading the harm throughout this mostly undisturbed landscape. Under any of the expressway alignments, three out of the six forest habitat blocks would suffer critical acreage losses and a fourth would lose important acreage. Using culverts and limited bridging, between 9 and 13 new stream crossings would occur on the three major, Class A-designated brooks where few disruptions currently exist. The wetlands that would be directly affected by these alternatives include all types found in the project study area.

Several types of adverse impacts would result from these losses and disturbances. Outright loss of 7.5 to 35 acres of wetland habitat would occur. Adjacent aquatic habitats would be damaged by sedimentation and loss of canopy cover, which would increase land surface and water temperatures. Within a few of the cold water streams that would be crossed by the expressway, most notably Latimer Brook, these impacts would reduce available habitat for the wild populations of brook and brown trout, placing these populations at risk. Surface water circulation and flow patterns would likely be altered by the substantial topographic cuts described in the DEIS, possibly drying out some wetlands or making others wetter, both of which would result in

substantial changes to plant and wildlife communities. Interruption and/or other decreases of the nutrient production and export function of many of the forested and shrub headwater wetland systems to be filled or affected would occur, damaging downstream aquatic communities. All of these adverse impacts would contribute to the severe fragmentation effects that would be caused by the expressway alternatives (see discussion below), and lead to an overall decrease in the productivity and functioning of the affected aquatic systems.

Highway construction would kill all plant species and sedentary aquatic wildlife species within the footprint of the road and many adjoining areas of the right-of-way, as well as less mobile wildlife species that could not escape construction activities quickly enough. Other aquatic plant and animal species would perish due to elimination or degradation of habitat in the immediate vicinity of the construction work. In addition, it is likely that for most of these wildlife species, surrounding habitat is already at carrying capacity; many displaced animals would ultimately die or displace other members of the same species that would in turn perish. Some individuals might survive relocation but, unable to establish and defend breeding territories, would not reproduce. Over time, operation of the highway would further degrade adjacent and downslope stream and wetland systems. Among the more vulnerable groups of wildlife would be aquatic macroinvertebrates, reptiles and amphibians, the organisms that form the bulk of the food web base. Reductions in the base of the food web often impair the flow of energy to higher trophic levels, reducing the overall productivity and nutrient export capabilities of the aquatic ecosystem.

Furthermore, the expressway alternatives would significantly fragment the ecologically intact and highly valuable wetland and upland habitat mosaic that comprises the new location corridor.[6] Construction of the full build expressway alternatives would substantially degrade the integrity of no fewer than three of the six forest habitat blocks. All of the full build alternatives would separate blocks 1 and 2, the two largest forest blocks in the corridor, and the F and G alignments would sever blocks 3, 5 and 6 as well. The partial build alternatives would separate blocks 1, 3 and 4.

Fragmentation harms wildlife in a number of ways, including: 1) creating a partial or total barrier to overland and/or riparian corridor movement; 2) reducing the value of habitat for some more specialized species adjacent to where the fragmentation occurs (this "negative buffer zone" effect is species specific and, for highways, varies in proportion to the width of the cleared alignment); 3) leaving habitat patches too small, isolated or otherwise unsuitable to support certain species with minimal habitat requirements, such as some amphibians, whose local survival relies on recolonization from larger regional breeding populations; 4) allowing more tolerant, nuisance or exotic species to infiltrate and dominate an area; which, in turn, 5) increases competition for food and breeding sites with native intolerant species, lessening their breeding success; and 6) increases mortality of intolerant species from predation or parasitism by the invading tolerant species.

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[6] For a more complete explanation of fragmentation, see Attachment II to EPA's June 15, 1998 letter to the Army Corps of Engineers, New England District regarding the Connecticut Route 6 Project.

Generally speaking, the extent of harm from fragmentation is a function of 1) the nature and dimensions of the intrusion; 2) the size and configuration of the affected area; and 3) the size and configuration of the remaining habitat patches. We recognize that some fragmentation has occurred in the new location corridor from secondary roads and scattered residential development which has diminished the value of the area for wildlife from a completely pristine condition. Nonetheless, the area still contains an expanse of relatively undisturbed and unfragmented stream and wetland systems and large forest blocks, and remains highly valuable for wildlife.

Construction of the expressway alternatives through the stream and wetland systems in the new location corridor would destroy plants and animals in the footprint of the fill and produce numerous other direct adverse impacts. Of less obvious but equal concern, highway construction and operation would impede daily and seasonal movement of animals between the various community types present in this portion of the landscape, and favor intrusion of generalist, opportunistic fauna and flora at the expense of native, intolerant species. Amphibians, for instance, with a strong drive to return annually to their native breeding ponds, would be particularly susceptible to these adverse effects of the highway. Other fragmentation impacts to the aquatic ecosystem from highway construction would include increased levels of noise and human disturbance; emissions of vehicle exhaust; stormwater runoff containing gas, oil, heavy metals, sand and de-icing salts; and easier access to remaining wetlands for pervasive suburban predators, such as house cats, dogs, raccoons, skunks and opossums from the surrounding residential landscape.

Constructing the expressway alternatives would add a massive physical barrier across the landscape. At 7.5 to 8 miles long and between 150 to 300 feet wide, the new expressway would present a formidable hurdle for most mobile wildlife, especially small and slower moving species, including turtles, snakes, frogs, salamanders, and numerous small mammals. Currently, no barriers of this type or dimension exist within the new location corridor. Despite CTDOT's intention to bridge the larger watercourses, the vast majority of the highway's length would be at ground level, with fencing likely running the length of the right-of-way. While bridging the larger streams and rivers would reduce the barrier effect of the highway on those species that primarily move along those corridors, it would not address the vast numbers of wetland-dependent wildlife that move across upland habitat as well. Many of the snakes, turtles, and salamanders that typically move across uplands would have difficulty even getting up on the road surface to cross over. Those that succeeded would likely perish on the pavement. Over time, local populations of these species could disappear as a result of the impediment to daily and seasonal movement between the various habitat types required for their survival. As individuals and populations of more sensitive species were weakened by the barrier effects of the highway, they would suffer additional harm by competition from opportunistic, generalist species more tolerant of human disturbance.

Numerous wildlife species observed or expected to occur in the project study area would be particularly susceptible to the direct and indirect adverse effects described above. Using *The Atlas of Breeding Birds of Connecticut*, Section 4.4.3 (page 55) of the DEIS describes 117 bird species as confirmed, probable, or possible breeders in the study area. Among the more sensitive bird

species likely to suffer greatest from the adverse effects of expressway construction and operation would be wetland dependent species such as northern waterthrush; American woodcock; ruffed grouse; broad-winged hawk; red-tailed hawk; eastern phoebe; eastern wood-pewee; eastern kingbird; veery; wood thrush; red-eyed vireo; yellow warbler; chestnut-sided warbler; black-throated green warbler; black-and-white warbler; cerulean warbler; worm-eating warbler; American redstart; Canada warbler; ovenbird; common yellowthroat; and scarlet tanager.

Many of the mammals observed or expected to occur in the study area require or prefer wetlands for a portion of their life cycles, including, river otter; mink; beaver; bobcat; muskrat; star-nosed mole; meadow vole; southern red-backed vole; muskrat; masked shrew; smoky shrew; short-tailed shrew; beaver; little brown myotis; eastern pipistrelle; meadow jumping mouse; ermine; and white-tailed deer, among others (Whitlock et al., 1994). These mammals would incur considerable harm from expressway construction and operation.

In Section 4.4.5 (page 57), the DEIS states that, according to Klemens (1993), 17 amphibian and 19 reptilian species are expected to occur in the project study area. The DEIS states further that during field visits to prepare the document, 9 amphibian and 8 reptilian species were observed. As stated in this Section, "[v]irtually all of the amphibian species which may occur in the corridor either prefer, or utilize to some extent, forested red maple wetlands," the most abundant type in the project study area. In addition to the multitude of amphibians and reptiles that would perish during construction of any of the expressway alternatives, operation of the highway would pose a formidable physical barrier to these small, relatively slow species. A large proportion of those individuals that were able to reach the pavement surface to cross the highway would likely perish as road kill.

3. Secondary Impacts

Section 5.18 (pages 189 to 196) of the DEIS describes in a general manner some possible consequences of constructing any of the alternatives described earlier in the document. According to the DEIS, an array of potential development activities could occur along an upgraded Route 82 and 85 corridor, or along and especially at the interchanges of a new expressway. While difficult to predict precisely, some secondary adverse impacts are more likely to occur than others. The DEIS expresses particular concern for additional impacts to forest habitat blocks and cold water fisheries, especially in Latimer Brook. Section 5.18.3 (page 194) of the DEIS states that the "new expressway alternatives would impact the greatest amount of habitat" and "secondary highway-induced development would be concentrated near the interchanges." This section describes the synergistic effects of new highway construction and operation and induced development activities, and the additive nature of their adverse impacts to the environment. The DEIS notes further that this type of "incremental degradation of habitat contributes to the cumulative loss of wildlife habitat currently experienced statewide." EPA agrees with the general description provided in the DEIS and shares the concern expressed for highway induced development activities. Finally, in Section 5.18.7 (page 197), the DEIS concludes that "[m]anagement of land use and development is the single most important tool that may be used by individual towns in order to reduce the adverse [secondary] impacts associated

with roadway construction, and take advantage of the positive impacts that result from transportation improvements." EPA agrees with this conclusion and recommends some specific management actions for the towns in the cover letter to this attachment.

4. Summary

The extensive direct, indirect and secondary adverse effects of constructing any of the expressway alignments contained in the DEIS would pervade the adjoining landscape, severely diminishing the wealth of ecological functions currently provided by the existing stream and wetland systems. The capacity of the landscape to support the existing variety and numbers of fish and wildlife species would be irreparably reduced. Based on the information available to date, EPA believes that these adverse impacts would cause or contribute to significant degradation of the aquatic ecosystem, a violation of section 230.10(c) of the 404(b)(1) guidelines, and that none of the expressway alternatives could receive a section 404 permit.

VI. Compensatory Mitigation

For a permit application to comply with the section 404(b)(1) guidelines, the proposal must include all appropriate and practicable steps to compensate for unavoidable impacts. Where, as here, the adverse impacts from any of the expressway alternatives contained in the DEIS would cause or contribute to significant degradation of the aquatic ecosystem, the mitigation plan must also prevent or offset the environmental damage to an extent sufficient to comply with section 230.10(c) of the guidelines (i.e., the impacts must no longer be significant). Whether a mitigation plan succeeds in sufficiently reducing significant impacts normally depends upon the extent to which it replaces or offsets the harm to the aquatic environment from the project. In this case, the types of aquatic habitats most severely damaged would be forested and shrub wetlands, streams, and vernal pools. It is technically difficult to restore or create these habitats successfully, let alone replicate the unusual juxtaposition of habitats that results in the high biodiversity of the project study area. Furthermore, there are myriad risks inherent in wetland restoration and especially creation that make these already difficult ventures more perilous. Among others, these risks include mistakes in project site analysis and engineering design; imperfect project implementation; and unforeseen natural events such as drought or severe storms. For example, the hydrology of forested wetlands is quite complex and difficult to duplicate. It would take at least several years to be able to make an initial judgment about whether an attempt to restore or create a forested wetland is successful; to establish a fully functioning system could require a decade or more. Moreover, we know of few instances of well-documented, persistent, and fully established forested wetland or vernal pool creation.

The DEIS presents a general discussion of compensatory mitigation, opting to more fully evaluate compensation following the determination of the LEDPA. Thirteen potential compensatory mitigation sites are described; all would involve wetland creation efforts. EPA agrees that specific compensatory mitigation proposals are best planned and evaluated after determining the extent and nature of unavoidable adverse impacts. However, we are doubtful that individual, scattered wetland creation efforts could replace to any comparable level the myriad and complex ecological

functions provided the stream and wetland systems located in the new location corridor that would be lost as a result of constructing one of the expressway alternatives.

VII. Air Quality Impacts -- Transportation Conformity

The state of Connecticut is nonattainment for ground level ozone and must fulfill the requirements of 40 CFR 93, the transportation conformity rule. The DEIS indicates that this project is not included in the statewide transportation improvement program (STIP) and will not be in the STIP until an alternative is selected for construction. We note that the NEPA process cannot conclude unless the record of decision and/or Final EIS indicates that this project is in a conforming long range plan and STIP. Furthermore, the FHWA must approve the conformity analysis in conjunction with EPA. Therefore, conclusion of the NEPA process cannot occur until this project is incorporated into a statewide conformity analysis that receives an affirmative finding by the FHWA and EPA. The Connecticut Department of Transportation must conduct a new or revised conformity analysis that contains the selected alternative. However, if the state desires to complete a conformity analysis before the final scope of this project is identified, we recommend that the worst case scenario (the scenario with the most air quality impacts) be included in the conformity analysis. Regardless, a conformity analysis containing this project must be approved prior to the issuance of a FEIS and/or record of decision.

VIII. Recommendations

Based upon our review of the DEIS, the CWA section 404 permit application, and supporting information, EPA believes that the upgrade alternatives represent the LEDPA, and that any of the expressway alternatives would significantly degrade the stream and wetland systems that exist in the new location corridor. At this point, EPA finds that any of the expressway alternatives contained in the DEIS would violate sections 230.10(a) and (c) of the 404(b)(1) guidelines and could not obtain a permit.

As reflected in the cover letter to this attachment, EPA recommends that a supplemental or revised DEIS be prepared and circulated for wide public review. A supplemental or revised DEIS could accomplish three main objectives. It could address the information deficiencies in the DEIS that are identified in this attachment to allow a more thorough evaluation of project need, alternatives, and potential environmental impacts. Also, it could focus particular attention on the upgrade alternatives and explore specific measures to make them more responsive to community needs.

Finally, we are aware of a parkway proposal currently being advanced by local citizens as a less damaging alternative to the expressway alternatives contained in the DEIS. We have not commented on this proposal since it is not presented as an alternative in the DEIS. We understand that it generally includes the construction of a limited access four lane arterial road along the “E" alignment, combined with a 3000 acre greenway corridor. EPA is prepared to explore this proposal in more detail, while recognizing that it will be a significant challenge to develop a proposal that could qualify for a permit. Many details, including those identified in the cover letter, would need to be addressed before the proposal could be fairly evaluated. Moreover, any

serious effort to develop this proposal should be accompanied by the comprehensive planning recommendations detailed in the cover letter.

IX. Rating

For the reasons discussed above, EPA has rated this EIS "Environmental Objections; Insufficient Information" in accordance with EPA's national rating system, a description of which is attached.

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